8200095

# THE UNITED STATES OF ANTERIOA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

# Northrup King Co.

Telliereas, there has been presented to the

#### Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, therefore, this certificate of plant variety protection is to grant unto the said applicant(s) and the successors, heirs or assigns of the said applicant(s) for the term of eighteen years from the date of this grant, subject to the payment of the required fees and periodic replenishment of viable basic red of the variety in a public repository as provided by LAW, the right to exothers from selling the variety, or offering it for sale, or reproducing it, or orting it, or exporting it, or using it in producing a hybrid or different therefrom, to the extent provided by the Plant Variety Protection Active 2, as amended, 7 u.s.c. 2321 et seq.)

COMMON WHEAT

'Klasic'

In Testimonn Withcreot, I have hereunto set my hand and caused the seal of the Plant Variety Exotection Office to be affixed at the City of Washington this 19th day of August in the year of our Lord one thousand nine andred and eighty-two.

Allast

Lowelth H. Ev. Acting Commissioner
Plant Variety Protection Office

Grain Division Agricultural Marketing Service

cotary of Agriculture

AGRI	CULTURAL MARK	NT OF AGRICULTUR ETING SERVICE IN & SEED DIVISION		,	FORM APPROVED OMB NO. 40-R382
APPLICATION FOR P INSTRUCTIONS: See Reverse	LANT VARIE	TY PROTECTIO	N CERTIFICATE	No certificate for pla be issued unless a co has been received (5 l	int variety protection may impleted application form J.S.C. 553).
1a. TEMPORARY DESIGN	ATION OF	1b. VARIETY NAM	Ē		AL USE ONLY
77S 1817		Klasic		PV NUMBER 820	0095
2. KIND NAME		3. GENUS AND SPE		FILING DATE	TIME XXXX
Wheat, Commo		Triticum &	<u>aestivum</u>	4/5/82 FEE RECEIVED	12:05 P.M.
4. FAMILY NAME (BOTA	NICAL)	5. DATE OF DETER		\$ <u>500.00</u>	4/5/82
Gramineae		October, 1	1978	\$ <u>250.00</u>	<u> 7/16/82</u>
6. NAME OF APPLICANT	(s)	7. ADDRESS (Stree	t and No. or R.F.D. No.,	City, State, and ZIP	8. TELEPHONE AREA
Northrup King			Jackson St. N.E.		CODE AND NUMBE
		Minne	Box 959 eapolis, MN 5544		612-781-5305
<ol> <li>IF THE NAMED APPLICATION: (Cor</li> </ol>	CANT IS NOT A PE poration, partnershi	RSON, FORM OF p, association, etc.)	10. IF INCORPORATE DATE OF INCOR	ED, GIVE STATE AND PORATION	11. DATE OF INCOR- PORATION
Corporation			Delawar		1896
12. NAME AND MAILING A ALL PAPERS:	DDRESS OF APPL	ICANT REPRESENTA	I ATIVE(S), IF ANY, TO S	SERVE IN THIS APPLIC	ATION AND RECEIVE
		Dr. Rober (address a			
13. CHECK BOX BELOW FO	R EACH ATTACH		3 450 ( )		
			Variety (See Section 5	i2 of the Plant Variety	Protection Act.)
🛚 13B. Exhibit B	, Novelty Stateme	ent.	en la companya di santa di sa La companya di santa		
X 13C. Exhibit C	, Objective Descri	ption of the Variety	(Request form from	Plant Variety Protecti	on Office.)
🔀 13D. Exhibit D	, Additional Desc	ription of the Varie	ty.		
14a. DOES THE APPLICANTO	S) SPECIFY THAT ). (If "Yes," answe	SEED OF THIS VAR r 14B and 14C below.)	IETY BE SOLD BY VAF	RIETY NAME ONLY AS	A CLASS OF CERTIFIE
14b. DOES THE APPLICANT	S) SPECIFY THAT	THIS VARIETY BE DNS?	14c. IF "YES," TO 14E TION BEYOND B	B, HOW MANY GENERA REEDER SEED?	ATIONS OF PRODUC-
YES	∐ №		FOUNDATION	REGISTERED	CERTIFIED
15a. DID THE APPLICANT(S) name of countries and dat	FILE FOR PROTE	CTION OF THIS VA	RIETY IN OTHER COUN	NTRIES? YES	NO (If "Yes," give
				<b>29</b>	4/20/82
<b></b>				_	re.
15b. HAVE RIGHTS BEEN GI and dates.)	RANTED THIS VAI	RIETY IN OTHER CO	UNTRIES? YES	NO (If "Yes,"	give name of countries
4					
					, ,
16. DOES THE APPLICANT(	S) AGREE TO THE	PUBLICATION OF H	IIS/HER (THEIR) NAME	(S) AND ADDRESS IN	THE OFFICIAL
17. The applicant(s) declar replenished upon requ	e(s) that a viable	sample of basic seed	l of this variety will be	e furnished with the a	pplication and will be
The undersigned applic variety is distinct, unif 42 of the Plant Variety	cant(s) is (are) the orm, and stable as	owner(s) of this se	xually reproduced nov	vel plant variety, and l	pelieve(s) that the provisions of Section
Applicant(s) is (are) in		representation here	in can jeopardike prot	ection and result in po	enalties.
4/1/82			Pobert	-W. Nor	nee
(DATE)		٠.		IGNATURE OF APPLIC	CANT)
			Ro	bert W. Romig	1

#### Exhibit A

## Origin and Breeding History of Klasic Wheat

"Klasic" is the result of hybridization and individual plant selection from the cross Klein Rendidor/2\* Sonora//Inia/3/Ciano/4/Yecora. Our pedigree is N3214-6A-1M-1A-OF. The experimental designation was 77S 1817.

We made the cross in the greenhouse at Eden Prairie, Minnesota, in the spring of 1972. The  $F_1$  was grown in the field at Eden Prairie during the 1972 season. This was followed by individual plant selections in alternating generations between Yuma, Arizona, and Moorhead, Minnesota, during the  $F_2$  to  $F_5$ . The  $F_5$  plant progeny row at Moorhead was harvested in bulk to provide seed for preliminary trials in 1975.

Klasic was yield tested in replicated trials in 1976 and 1977. From a 1976 replicated test plot, six head selections were made. In 1976-77, six  $F_8$  headrow lines were grown at Yuma and increased later in 1977 in southern California as pure lines ( $F_9$ ). Four lines were yield tested at Yuma in 1977-78 while each were again increased as pure lines at Yuma in 1977-78 ( $F_{10}$ ).

In the fall of 1978, one head-row line, 78ASH 30018, was selected to represent the variety. This head-row line was increased at Yuma in 1978-79. Klasic is then an  $F_8$  head-row derived line. Breeders seed in 1980 is in the  $F_{12}$  generation of selfing.

The variety is uniform and stable, except that false black chaff symptoms may be expressed under certain temperature and light conditions. Foundation, registered, and certified seed of Klasic have been grown in Arizona and California.

### Exhibit B

## Novelty Statement for Klasic Wheat

Klasic is most similar to "Probred" and "771" but differs from both Probred and 771 in seed color. Klasic has white kernels; whereas the kernel color for Probred and 771 is red.

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U.S. DEPARTMENT OF AGRICULTURE AGRICULTURAL MARKETING SERVICE LIVESTOCK, POULTRY, GRAIN & SEED DIVISION BELTSVILLE, MARYLAND 20705

EXHIBIT C (Wheat)

# OBJECTIVE DESCRIPTION OF VARIETY

1 0 CM. SHORTER THAN  8 4 = LEMH 5 = NUGAINES 6 = LEEDS 8=Anza  5. PLANT COLOR AT BOOTING (See reverse):  1 1 = YELLOW GREEN 2 = GREEN 3 = BLUE GREEN  1 1 = YELLOW 2 = PURPLE  2 Waxy bloom: 1 = ABSENT 2 = PRESENT  4 Internodes: 1 = HOLLOW 2 = SOLID  5. AURICLES:  1 Anthocyanin: 1 = ABSENT 2 = PRESENT  6 = LEEDS 8=Anza  7 ANTHER COLOR:  1	INSTRUCTIONS: See Reverse. WHEAT (TRITICUM SPE	), Augusta
ADDRESS (Street and No. or R.F.D. No., City, State, and ZIF Code)  1500 Jackson St. N. E.  Minneapolis MN 55413  Place the appropriate number that describes the varietal character of this variety in the boxes below.  Place a zero in first box (*18 0 19 or [0 19] when number is either 99 or less or 9 or less.  1. KIND:  1 1 = SORMON 2 = DURUM 3 = EMMER 4 = SPELT 5 = POLISH 6 = POULARD 7 = CLUB  2. TYPE:  1 1 = SPRING 2 = WINTER 3 = OTHER (Specify)  2. TYPE:  1 1 = SPRING 2 = WINTER 3 = OTHER (Specify)  3. SEASON - NUMBER OF DAYS FROM EMERGENCE TO:  1 1 = WHITE 2 = RED 3 = OTHER (Specify)  3. SEASON - NUMBER OF DAYS FROM EMERGENCE TO:  1 0 NO. OF DAYS EARLIER THAN		
VARIETY VARIETY COLORS   VARIETY VARIETY COLORS		—— PVPO NUMBER 8200095
Mineapolis MN 55413  Riasic  Place the appropriate number that describes the varietal character of this variety in the boxes below.  Place a zero in first box (*4* 0 8 8 ) or 0 0 9 ) when number is either 99 or less or 9 or less.  I have a zero in first box (*4* 0 8 9 0 1 0 0 0 9 ) when number is either 99 or less or 9 or less.  I have a zero in first box (*4* 0 8 9 0 1 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0		VARIETY NAME OR TEMPORARY
Minneapolis MN 55413  Place the appropriate number that describes the varietal character of this variety in the boxes below. Place a zero in first box (e.s. 0 9 9 9 0 0 9 ) when number is either 99 or less or 9 or less of 9 or less or 9 or	1500 Jackson St. N. E.	DESIGNATION
Place a zero in first box (6-16 0 8 9 or 0 9 ) when number is either 99 or less or 9 or less.  1		Klasic
1. KIND.  1. 1 = COMMON 2 = DURUM 3 = EMMER 4 = SPELT 5 = POLISH 6 = POULARD 7 = CLUB  2. TYPE.  1. 1 = SPRING 2 = WINTER 3 = OTHER (Specify)  2. 1 = SOFT 3 = OTHER (Specify)  3. SEASON NUMBER OF DAYS FROM EMERGENCE TO:	Place the appropriate number that describes the varietal character of this varietal	ety in the boxes below.
1 1 = COMMON 2 = OURUM 3 = EMMER 4 = SPELT 5 = POLISH 6 = POULARD 7 = CLUB  2 TYPE.  1 1 = SPRING 2 = WINTER 3 = OTHER (Specify)  2 1 = SOFT 3 = OTHER (Specify)  1 1 = WHITE 2 = RED 3 = OTHER (Specify)  3. SEASON - NUMBER OF DAYS FROM EMERGENCE TO:  FIRST FLOWERING  4. MATURITY (50% Flowering):  1 0 NO. OF DAYS LATER THAN		r less or 9 or less.
2 TYPE:  1 1 = SPRING 2 = WINTER 3 = OTHER (Specify)  2 1 = SOFT 3 = OTHER (Specify)  1 1 = WHITE 2 = RED 3 = OTHER (Specify)  3. SEASON - NUMBER OF DAYS FROM EMERGENCE TO:  FIRST FLOWERING  4. MATURITY (50% Flowering):  1 0 NO. OF DAYS LATER THAN		
1   1 = SPRING   2 = WINTER   3 = OTHER (Specify)   2   2   2   2   2   3 = OTHER (Specify)   3   3 = OTHER (Specify)   2   3   3 = OTHER (Specify)   3   3 = OTHER (Specify)   2   3   3 = OTHER (Specify)   3   3 = OTHER (Speci		6 = POULARD / = CLUB
1   1 = SPRING   2 = WINTER   3 = OTHER (Specify)   2   2 = HARD  1   1 = WHITE   2 = RED   3 = OTHER (Specify)   3   5 = SEASON - NUMBER OF DAYS FROM EMERGENCE TO:		OFT 3 = OTHER (Specify)
1   = WHITE   2 = RED   3 = OTHER (Specify)  3. SEASON - NUMBER OF DAYS FROM EMERGENCE TO:		ARD
3. SEASON - NUMBER OF DAYS FROM EMERGENCE TO:		•
FIRST FLOWERING  4. MATURITY (50% Flowering):  1 0 NO. OF DAYS EARLIER THAN		
4. MATURITY (50% Flowering):  1 0 NO. OF DAYS EARLIER THAN	5, SEASON FROMBER OF DATS FROM EMERGENCE 10:	
1 0 No. of Days Earlier Than   8   1 = ARTHUR   2 = SCOUT   3 = CHRIS		LAST FLOWERING
NO. OF DAYS LATER THAN	4. MATURITY (50% Flowering):	
NO. OF DAYS LATER THAN.  7 = Probred 8 = Anza  5. PLANT HEIGHT (From soil level to top of head):  0 8 1	1 0 NO. OF DAYS EARLIER THAN	ARTHUR 2 = SCOUT 3 = CHRIS
5. PLANT HEIGHT (From soil level to top of head):  0 8 1	1:     1   1   1   1   1   1   1   1   1	
O 8 1 CM. HIGH  O CM. TALLER THAN		Probred 8 = Anza
O CM. TALLER THAN		
1 0 CM. SHORTER THAN	0 8 1 CM. HIGH	
1 0 CM. SHORTER THAN	0 CM. TALLER THAN 7	
4 = LEMHI 5 = NUGAINES  1 1 = YELLOW GREEN 2 = GREEN 3 = BLUE GREEN  1 1 = YELLOW 2 = PURPLE  2 Waxy bloom: 1 = ABSENT 2 = PRESENT  4 = LEMHI 5 = NUGAINES  7. ANTHER COLOR:  1 1 = YELLOW 2 = PURPLE  2 Waxy bloom: 1 = ABSENT 2 = PRESENT  2 Internodes: 1 = HOLLOW 2 = SOLID  3 NO. OF NODES (Originating from node above ground)  CM. INTERNODE LENGTH BETWEEN FLAG LEAF AND LEAF BELOW  AND LEAF BELOW  AND LEAF:  1 Hairiness: 1 = ABSENT 2 = PRESENT  2 Flag leaf at: 1 = ERECT 2 = RECURVED booting stage: 3 = OTHER (Specify):  2 Flag leaf: 1 = NOT TWISTED 2 = TWISTED		ARTHUR 2 = SCOUT 3 = CHRIS 7=Probrec
1   1 = YELLOW GREEN   2 = GREEN   3 = BLUE GREEN   1   1 = YELLOW   2 = PURPLE    3. STEM:  1   Anthocyanin:   1 = ABSENT   2 = PRESENT   2   Waxy bloom:   1 = ABSENT   2 = PRESENT    2   Waxy bloom:   1 = ABSENT   2 = PRESENT   1   Internodes:   1 = HOLLOW   2 = SOLID    3   NO. OF NODES (Originating from node above ground)   CM. INTERNODE LENGTH BETWEEN FLAG LEAF    4   AND LEAF BELOW   AND LEAF BELOW    5   AURICLES:  1   Anthocyanin:   1 = ABSENT   2 = PRESENT   2 = PRESENT    6   LEAF:  2   Flag leaf at   1 = ERECT   2 = RECURVED	1 0 CM. SHORTER THAN	EMHI 5 = NUGAINES 6 = LEEDS <b>8=Anza</b>
3, STEM:  1 Anthocyanin: l = ABSENT 2 = PRESENT  2 Waxy bloom: l = ABSENT 2 = PRESENT  2 Internodes: l = HOLLOW 2 = SOLID  3 NO. OF NODES (Originating from node above ground)  4 AND LEAF BELOW  Anthocyanin: l = ABSENT 2 = PRESENT  1 Hairiness: l = ABSENT 2 = PRESENT  2 Flag leaf at l = ERECT 2 = RECURVED booting stage: 3 = OTHER (Specify):  2 Waxy bloom: l = ABSENT 2 = PRESENT  1 Internodes: l = HOLLOW 2 = SOLID  CM. INTERNODE LENGTH BETWEEN FLAG LEAF  AND LEAF BELOW  2 Flag leaf: l = NOT TWISTED 2 = TWISTED	6. PLANT COLOR AT BOOTING (See reverse): 7. ANTHER	COLOR:
Anthocyanin:   = ABSENT   2 = PRESENT   2   Waxy bloom:   = ABSENT   2 = PRESENT   2	1 1 = YELLOW GREEN 2 = GREEN 3 = BLUE GREEN 1 = YE	LLOW 2 = PURPLE
Hairiness of last internode of rachis: 1 = ABSENT 2 = PRESENT  O 3 NO. OF NODES (Originating from node above ground)  CM. INTERNODE LENGTH BETWEEN FLAG LEAF AND LEAF BELOW  AND LEAF BELOW  Anthocyanin: 1 = ABSENT 2 = PRESENT  Thairiness: 1 = ABSENT 2 = PRESENT  LEAF:  2 Flag leaf at 1 = ERECT 2 = RECURVED booting stage: 3 = OTHER (Specify):  2 Flag leaf: 1 = NOT TWISTED 2 = TWISTED	8. STEM:	
2 internode of rachis: 1 = ABSENT 2 = PRESENT  1 Internodes: 1 = HOLLOW 2 = SOLID  CM. INTERNODE LENGTH BETWEEN FLAG LEAF AND LEAF BELOW  AND LEAF BELOW  AND LEAF:  1 Hairiness: 1 = ABSENT 2 = PRESENT  1 Hairiness: 1 = ABSENT 2 = PRESENT  2 Flag leaf at 1 = ERECT 2 = RECURVED 5 to ording stage: 3 = OTHER (Specify):  2 Flag leaf: 1 = NOT TWISTED 2 = TWISTED	1 Anthocyanin: 1 = ABSENT 2 = PRESENT 2 Waxy b	loom:   = ABSENT 2 = PRESENT
AND LEAF BELOW  The property of the property o		des: 1 = HOLLOW 2 = SOLID
Anthocyanin:   = ABSENT   2 = PRESENT   1   Hairiness:     = ABSENT   2 = PRESENT   2		
2 Flag leaf at   = ERECT 2 = RECURVED   2 Flag leaf:   NOT TWISTED 2 = TWISTED	P. AURICLES:	
2. Flag leaf at   = ERECT 2 = RECURVED   2   Flag leaf:   NOT TWISTED 2 = TWISTED   2   TWISTED   2	Anthocyanin: 1 = ABSENT 2 = PRESENT	ss: l = ABSENT 2 = PRESENT
Flag leaf at   = ERECT 2 = RECURVED   2   Flag leaf:   NOT TWISTED 2 = TWISTED		
2 booting stage: 3 = OTHER (Specify): 2 Flag leaf: 1 = NOT TWISTED 2 = TWISTED		
Hairs of first leaf sheath: 1 = ABSENT 2 = PRESENT 2 Waxy bloom of flag leaf sheath: 1 = ABSENT 2 = PRESENT	2 hooring stage:	af: 1 = NOT TWISTED 2 = TWISTED
		loom of flag leaf sheath: 1 = ABSENT 2 = PRESENT
1 9 MM. LEAF WIDTH (First leaf below flag leaf) 2 9 CM. LEAF LENGTH (First leaf below flag leaf).	1 9 MM. LEAF WIDTH (First leaf below flag leaf)	M LEAS LENGTH (Right land holow flot land).

1 Shape: 1 = OVATE 2 = OVAL 3 = ELLIPTICAL  1 Brush: 1 = SHORT 2 = MEDIUM 3 = LONG  1 Brush: 1 = NOT COLLARED 2 = COLLARED  4 See instructions): 4 = BROWN 5 = BLACK  1 Color: 1 = WHITE 2 = AMBER 3 = RED 4 = PURPLE 5 = OTHER (Specity)  0 7 MM. LENGTH  0 3 MM. WIDTH  4 8 GM. PER 1000 SEEDS  17. SEED CREASE:  2 Width: 1 = 60% OR LESS OF KERNEL 'WINOKA' 2 = 80% OR LESS OF KERNEL 'CHRIS' 3 = NEARLY AS WIDE AS KERNEL 'LEMHI'  18. DISEASE: (0 = Not Tested, 1 = Susceptible, 2 = Resistant) 2 STEM RUST TNMH 2 LEAF RUST (Races) KGB, CBC 0 OTHER (Specity)  OTHER (Specity)  OTHER (Specity)	5
1   Color at markerity:   5   BROWN   6   BLACK   7   OTHER (Specify):     1   3   CM. LENGTH   1   1   MM. WIDTH   1   1   MM. WIDTH   1   1   1   MM. WIDTH   1   1   1   MM. WIDTH   1   1   1   1   1   1   1   1   1	VATE
1 3 CALLERSTH 1 1 1 1 MM. WIDTH  12. GLUMES AT MATURITY: 3 Length: 1 = SHORT (CA. 7 mm.) 2 = MEDIUM (CA. 8 mm.) 2 Width: 1 = NARROW (CA. 3 mm.) 2 = MEDIUM (CA. 8 mm.) 3 = LONG (CA. 9 mm.) 2 = MEDIUM (CA. 8 mm.) 2 Width: 1 = NARROW (CA. 3 mm.) 2 = MEDIUM (CA. 8 mm.) 3 = WIDE (CA. 4 mm.) 2 = MEDIUM (CA. 8 mm.) 3 = LONG (CA. 9 mm.) 2 = MEDIUM (CA. 8 mm.) 2 = MEDIUM (C	4
12. GLUMES AT MATURITY:  3 Length: 1 = SHORT (CA. 7 mm.) 2 = MEDIUM (CA. 8 mm.) 3 = LONG (CA. 9 mm.) 2 = MEDIUM (CA. 8 mm.) 2 = MEDIUM (C	. *
3 Length: 1 = SHORT (CA. 7 mm.) 2 = MEDIUM (CA. 8 mm.) 2 = MEDIUM (CA. 8 mm.) 3 = WIDE (CA. 4 mm.) 2 = MEDIUM (CA. 3 mm.) 2 = MEDIUM (CA. 3 mm.) 2 = MEDIUM (CA. 3 mm.) 3 = WIDE (CA. 4 mm.) 2 = MEDIUM (CA. 3 mm.) 2 = MEDIUM (CA. 3 mm.) 2 = MEDIUM (CA. 3 mm.) 3 = WIDE (CA. 4 mm.) 2 = MEDIUM (CA. 3 mm.) 2 = MEDIUM (CA. 3 mm.) 2 = MEDIUM (CA. 4 mm.) 2 = MEDIUM (CA. 4 mm.) 2 = MEDIUM (CA. 3 mm.) 2 = MEDIUM (CA. 4 mm.) 3 = MEDIUM (CA. 4 m	
3 Shoulder 1 = WANTING 2 = OBLIQUE 3 = ROUNDED 3 Beak: 1 = OBTUSE 2 = ACUTE 3 = ACUMINA:  3 Shoulder 1 = WANTING 2 = OBLIQUE 3 = ROUNDED 3 Beak: 1 = OBTUSE 2 = ACUTE 3 = ACUMINA:  13. COLEOPTILE COLOR:  1	
3 shape: 4 = SQUARE 5 = ELEVATED 6 = APICULATE  3 Beak: 1 = OBTUSE 2 = ACUTE 3 = ACUMINA:  3 GOLEOPTILE COLOR:  1	A. 3.5 mm.)
1   1 = WHITE   2 = RED   3 = PURPLE   1   1   1   1   1   1   1   1   1	ATE
1   E WHITE   2 = RED   3 = PURPLE   1   1 = ABSENT   2 = PRESENT   15. JUVENILE PLANT GROWTH HABIT:   3   1 = PROSTRATE   2 = SEMI-ERECT   3 = ERECT   16. SEED:   1   Shape:   1 = OVATE   2 = OVAL   3 = ELLIPTICAL   1   Cheek:   1 = ROUNDED   2 = ANGULAR   1   Brush:   1 = SHORT   2 = MEDIUM   3 = LONG   1   Brush:   1 = NOT COLLARED   2 = COLLARED	
16. SEED:  1 Shape:   = OVATE   2 = OVAL   3 = ELLIPTICAL   1   Cheek:   = ROUNDED   2 = ANGULAR    1 Brush:   = SHORT   2 = MEDIUM   3 = LONG   1   Brush:   1 = NOT COLLARED   2 = COLLARED    4 Phenol reaction   1 = IVORY   2 = FAWN   3 = LT. BROWN   2 = FAWN   3 = LT. BROWN    5 = BLACK   1   Color:     = WHITE   2 = AMBER   3 = RED   4 = PURPLE   5 = OTHER (Specify)    17. SEED CREASE:  2 Width:   = 60% OR LESS OF KERNEL 'WINOKA'   2 = 80% OR LESS OF KERNEL 'CHRIS'   2 = 35% OR LESS OF KERNEL 'CHRIS'   3 = 50% OR LESS OF KERNEL 'CHRIS'   3 = 50% OR LESS OF KERNEL 'CHRIS'   3 = 50% OR LESS OF KERNEL 'LEMHI'   3 = 50% OR LESS OF KERN	
16. SEED:  1 Shape: 1 = OVATE 2 = OVAL 3 = ELLIPTICAL  1 Brush: 1 = SHORT 2 = MEDIUM 3 = LONG  1 Brush: 1 = SHORT 2 = MEDIUM 3 = LONG  1 Brush: 1 = NOT COLLARED 2 = COLLARED  4 See instructione): 4 = BROWN 5 = BLACK  1 Color: 1 = WHITE 2 = AMBER 3 = RED 4 = PURPLE 5 = OTHER (Specify)  0 7 MM. LENGTH  0 3 MM. WIDTH  4 8 GM. PER 1000 SEEDS  17. SEED CREASE:  2 Width: 1 = 60% OR LESS OF KERNEL 'WINOKA' 2 = 80% OR LESS OF KERNEL 'CHRIS' 3 = NEARLY AS WIDE AS KERNEL 'CHRIS' 3 = S0% OR LESS OF KERNEL 'CHRIS' 3 = 50% OR LESS OF KERNEL 'CHRIS' 18. DISEASE: (0 = Not Tested, 1 = Susceptible, 2 = Resistant)  2 (Races)  RTOO, RKOS  0 BUNT  OTHER (Specify)  OTHER (Specify)  OTHER (Specify)  OTHER (Specify)  HESSIAN FLY  OTHER (Specify)  OTHER (Specify)  OTHER (Specify)  OTHER (Specify)  OTHER (Specify)	<del></del>
Shape: 1 = OVATE 2 = OVAL 3 = ELLIPTICAL    1	
1 Shape: 1 = OVATE 2 = OVAL 3 = ELLIPTICAL 1 Cheek: 1 = ROUNDED 2 = ANGULAR 1 Brush: 1 = SHORT 2 = MEDIUM 3 = LONG 1 Brush: 1 = NOT COLLARED 2 = COLLARED 4 (See instructions): 4 = BROWN 5 = BLACK 1 Color: 1 = WHITE 2 = AMBER 3 = RED 4 = PURPLE 5 = OTHER (Specity)  O 7 MM. LENGTH 0 3 MM. WIDTH 4 8 GM. PER 1000 SEEDS  17. SEED CREASE: 2 Width: 1 = 60% OR LESS OF KERNEL 'WINOKA' 2 = 80% OR LESS OF KERNEL 'CHRIS' 3 = NEARLY AS WIDE AS KERNEL 'LEMHI' 3 = 50% OR LESS OF KERNEL 'LEMHI' 3 = 50% OR LESS OF KERNEL 'LEMHI' 3 = 50% OR LESS OF KERNEL 'LEMHI'  8. DISEASE: (0 = Not Tested, 1 = Susceptible, 2 = Resistant) 2 STEM RUST TNMH 2 LEAF RUST (Races) KGB, CBC 0 FOWDERY MILDEW 0 BUNT 0 OTHER (Specity)  O APHID (Bydv.) 0 GREEN BUG 0 CEREAL LEAF BEE  OTHER (Specity) 0 GREEN BUG 0 CEREAL LEAF BEE	
1 Brush:   = SHORT   2 = MEDIUM   3 = LONG   1 Brush:   1 = NOT COLLARED   2 = COLLARED   4   Phenof reaction   1 = IVORY   2 = FAWN   3 = LT. BROWN   4 = BROWN   5 = BLACK   1   Color:   1 = WHITE   2 = AMBER   3 = RED   4 = PURPLE   5 = OTHER (Specify)   5 = OTHER (Specify)   6   7   MM. LENGTH   0   3   MM. WIDTH   4   8   GM. PER 1000 SEEDS   6   GM. PER 1000 SEEDS   7   SEED CREASE:   2   Width:   1 = 60% OR LESS OF KERNEL 'WINOKA'   2 = 80% OR LESS OF KERNEL 'CHRIS'   3 = 50% OR LESS OF KERNEL 'CHRIS'   3 = 50% OR LESS OF KERNEL 'CHRIS'   3 = 50% OR LESS OF KERNEL 'LEMHI'   3 = 50% OR LESS OF	State of the state of
Phenoi reaction   1 = IVORY   2 = FAWN   3 = LT. BROWN   1 = IVORY   2 = FAWN   3 = LT. BROWN   1 = IVORY   2 = FAWN   3 = LT. BROWN   1 = IVORY   2 = FAWN   3 = LT. BROWN   1 = IVORY   2 = BLACK   1 = SUSCEPTION   2 = AMBER   3 = RED   4 = PURPLE   5 = OTHER (Specity)   1 = 20% OR LESS OF KERNEL 'SCOUT'   2 = 80% OR LESS OF KERNEL 'WINOKA'   2 = 80% OR LESS OF KERNEL 'CHRIS'   3 = NEARLY AS WIDE AS KERNEL 'LEMHI'   3 = 50% OR LESS OF KERNEL 'CHRIS'   3 = NEARLY AS WIDE AS KERNEL 'LEMHI'   3 = 50% OR LESS OF KERNEL 'LEMHI'   1 = IVORY   1 =	
4 (See instructions): 4 = BROWN 5 = BLACK  1 Color: 1 = WHITE 2 = AMBER 3 = RED 4 = PURPLE 5 = OTHER (Specify)  17. SEED CREASE:  2 Width: 1 = 60% OR LESS OF KERNEL 'WINOKA' 2 = 80% OR LESS OF KERNEL 'CHRIS' 3 = NEARLY AS WIDE AS KERNEL 'LEMHI' 3 = 50% OR LESS OF KERNEL 'CHRIS' 3 = NEARLY AS WIDE AS KERNEL 'LEMHI' 3 = 50% OR LESS OF KERNEL 'LEMHI'  2 STEM RUST TNMH 2 (Races) KGB, CBC 0 STRIPE RUST (Races) 1 LOOSE SMUT 0 POWDERY MILDEW 0 BUNT 0 OTHER (Specify)  9 INSECT: (0 = Not Tested, 1 = Susceptible, 2 = Resistant) 0 SAWFLY 0 APHID (Bydv.) 0 GREEN BUG 0 CEREAL LEAF BEE	
O 7 MM. LENGTH O 3 MM. WIDTH  4 8 GM. PER 1000 SEEDS  17. SEED CREASE:  2 Width: I = 60% OR LESS OF KERNEL 'WINOKA' 2 = 80% OR LESS OF KERNEL 'CHRIS' 3 = NEARLY AS WIDE AS KERNEL 'LEMHI' 3 = 50% OR LESS OF KERNEL 'CHRIS' 3 = NEARLY AS WIDE AS KERNEL 'LEMHI' 3 = 50% OR LESS OF KERNEL 'LEMHI' 3 = 50% OR LESS OF KERNEL 'LEMHI'  2 STEM RUST TNMH 2 LEAF RUST (Races) KGB, CBC (Races)	
17. SEED CREASE:  2 Width: I = 60% OR LESS OF KERNEL 'WINOKA' 2 = 80% OR LESS OF KERNEL 'CHRIS' 3 = NEARLY AS WIDE AS KERNEL 'LEMHI' 3 = 50% OR LESS OF KERNEL 'CHRIS' 3 = 50% OR LESS OF KERNEL 'LEMHI'  2 STEM RUST TNMH 2 LEAF RUST (Races) KGB, CBC (Races)  1 LOOSE SMUT  O POWDERY MILDEW  O BUNT  O THER (Specify)  O SAWFLY  O APHID (Bydv.)  O GREEN BUG  O CEREAL LEAF BEE  OTHER (Specify)  HESSIAN FLY  O APACES:  O CREASE OF KERNEL 'SCOUT' 2 = 35% OR LESS OF KERNEL 'SCOUT' 3 = 50% OR LESS OF KERNEL 'SCOUT' 3 = 50% OR LESS OF KERNEL 'SCOUT' 3 = 50% OR LESS OF KERNEL 'SCOUT' 4 = 50% OR LESS OF KERNEL 'SCOUT' 4 = 50% OR LESS OF KERNEL 'SCOUT' 4 = 50% OR LESS OF KERNEL 'SCOUT' 5 = 50% OR LESS OF KERNEL 'CHRIS' 6 = 50	· .
2 Width: I = 60% OR LESS OF KERNEL 'WINOKA' 2 = 80% OR LESS OF KERNEL 'CHRIS' 3 = NEARLY AS WIDE AS KERNEL 'LEMHI'  8. DISEASE: (0 = Not Tested, 1 = Susceptible, 2 = Resistant) 2 CRACES  RTQQ, RKQS DEPth: 1 = 20% OR LESS OF KERNEL 'SCOUT' 2 = 35% OR LESS OF KERNEL 'CHRIS' 3 = 50% OR LESS OF KERNEL 'CHRIS' 3 = 50% OR LESS OF KERNEL 'CHRIS' 3 = 50% OR LESS OF KERNEL 'SCOUT' 2 = 35% OR LESS OF KERNEL 'SCOUT' 2 = 35% OR LESS OF KERNEL 'SCOUT' 3 = 50% OR LESS OF KERNEL 'SCOUT' 2 = 35% OR LESS OF KERNEL 'SCOUT' 3 = 50% OR LESS OF KERNEL 'SCOUT' 4	
2 = 80% OR LESS OF KERNEL 'CHRIS' 3 = NEARLY AS WIDE AS KERNEL 'LEMHI'  8. DISEASE: (0 = Not Tested, 1 = Susceptible, 2 = Resistant) 2   STEM RUST TNMH   2   LEAF RUST (Races)   KGB, CBC   0   STRIPE RUST (Races)   1   LOOSE SMUT    O POWDERY MILDEW   0   BUNT   OTHER (Specify)  9. INSECT: (0 = Not Tested, 1 = Susceptible, 2 = Resistant)   0   GREEN BUG   0   CEREAL LEAF BEE    OTHER (Specify)   HESSIAN FLY   GP   A   B   C   CRACES:   CRACES	
2 = 80% OR LESS OF KERNEL 'CHRIS'  3 = NEARLY AS WIDE AS KERNEL 'LEMHI'  8. DISEASE: (0 = Not Tested, 1 = Susceptible, 2 = Resistant)  2   STEM RUST TNMH   2   LEAF RUST   (Races)   KGB   CBC   0   (Races)   1   LOOSE SMUT  RTQQ , RKQS   0   BUNT   OTHER (Specify)  9. INSECT: (0 = Not Tested, 1 = Susceptible, 2 = Resistant)  0   SAWFLY   0   APHID (Bydv.)   0   GREEN BUG   0   CEREAL LEAF BEE   CRACES:   D   E   F   G	
8. DISEASE: (0 = Not Tested, 1 = Susceptible, 2 = Resistant)  2. STEM RUST TNMH  2. LEAF RUST (Races) KGB, CBC  0. STRIPE RUST (Races)  1. LOOSE SMUT  POWDERY MILDEW  0. BUNT  0. OTHER (Specify)  9. INSECT: (0 = Not Tested, 1 = Susceptible, 2 = Resistant)  0. SAWFLY  0. APHID (Bydv.)  0. GREEN BUG  0. CEREAL LEAF BEE  0. RACES:  0. TRACES:  0. STRIPE RUST (Races)  1. LOOSE SMUT  0. OTHER (Specify)  0. OTHER (Specify)  0. CEREAL LEAF BEE  0. GRACES:	1
2 STEM RUST TNMH 2 LEAF RUST (Races) KGB, CBC (Races) 1 LOOSE SMUT  RTQQ, RKQS O BUNT OTHER (Specify)  9. INSECT: (0 = Not Tested, 1 = Susceptible, 2 = Resistant)  O SAWFLY O APHID (Bydv.)  OTHER (Specify) GP A B C C RACES:	
RTQQ, RKQS  O POWDERY MILDEW  O BUNT  OTHER (Specify)  O SAWFLY  O APHID (Bydv.)  O GREEN BUG  O CEREAL LEAF BEE  OTHER (Specify)  HESSIAN FLY  RACES:  O RACES:  O RECENDED  O CEREAL LEAF BEE	
O POWDERY MILDEW  O BUNT  OTHER (Specify)  9. INSECT: (0 = Not Tested, 1 = Susceptible, 2 = Resistant)  O SAWFLY  O APHID (Bydv.)  O GREEN BUG  O CEREAL LEAF BEE  OTHER (Specify)  HESSIAN FLY  RACES:  D  E  G  G  G  G  G  G  G  G  G  G  G  G	
O SAWFLY O APHID (Bydv.) O GREEN BUG O CEREAL LEAF BEE OTHER (Specify) HESSIAN FLY RACES:  D E  G G G G G G G G G G G G G G G G G	<u> </u>
O SAWFLY O APHID (Bydv.) O GREEN BUG O CEREAL LEAF BEE  OTHER (Specify) HESSIAN FLY RACES:  D E  G G G G G G G G G G G G G G G G G	<u> </u>
RACES:   D   E   G   G   G   G   G   G   G   G   G	EETLE
RACES: DE E ESTERIO G	c
and the state of t	
CHARACTER NAME OF VARIETY CHARACTER NAME OF VARIETY CHARACTER NAME OF VARIETY	
Plant tillering (3)	
leaf size	
leaf color	
Logi carriago	
INSTRUCTIONS Probred	

- (a) L.W. Briggle and L. P. Reitz, 1963, Classification of Triticum Species and Wheat Varieties Grown in the United States, Technical Bulletin 1278, United States Department of Agriculture.
- (b) W.E. Walls, 1965, A Standardized Phenol Method for Testing Wheat Seeds for Varietal Purity, contribution No. 28 to the handbook of seed testing prepared by the Association of Official Seed Analysts. (See attachment.)

LEAF COLOR: Nickerson's or any recognized color fan should be used to determine the leaf color of the described variety.

#### Exhibit D

#### Additional Description of Klasic Wheat

Klasic is a cultivar of <u>Triticum aestivum L.</u> with spring growth habit. The kernels are hard, white, and ovate in shape. Cheeks are rounded. The crease is narrow to midwide and middeep. Germs are midsized and the brush is small and short. Spikes are awned, fusiform, and lax to middense. Glumes are white, glabrous, long, and midwide. Glume shoulders are rounded to square in sahpe and midwide. Beaks are midwide, accuminate, and 6-15 mm long.

This variety is a semidrarf wheat with height comparable to Probred. Heading dates for Klasic have been on the average of five days earlier than Probred at Yuma, Arizona, and equal to Probred at Woodland, California. Relative maturity is early. Klasic is moderately resistant to some races of stem rust (<u>Puccina graminis f. sp. tritici</u>) and resistant in the seedling stage to leaf rust (<u>P. recondita</u>) races KGB and CBC.

Stem Rust Race	Seedling <u>Reaction</u>
TNMH TNMK RHRS QSHS RTQQ RKQS	2, 2+ 3, 2 S S 2
Leaf Rust Race	Seedling Reaction
KGB CBC	0; 0;

The coleoptile color is white and seedling anthocyanin is absent. Juvenile plant growth is erect. Plant color at booting is green. Waxy bloom is present on the stem and flag leaf sheath. Auricles are not hairy and have no anthocyanin. The stem is hollow and has no anthocyanin. Usually, three to four nodes originate from the node above ground. The flag leaf is recurved at boot stage and often twisted. Another color is yellow.

Overall quality for bread is slightly better than Probred. Absorption and mix time are very similar to Probred.

Under certain environmental conditions, black chaff may appear on the glumes of Klasic. This black chaff is probably due to pseudo black chaff which is the natural development of melanin pigments in some genetic mateirals with stem rust resistance when grown under certain conditions of temperature and light intensity.

Test weights of Klasic in comparison to checks grown in replicated small plot trials at Yuma, Arizona and Woodland, California in 1976-80. Table 1.

Location and Year	Klasic kg/hl	Probred kg/hl	Anza kg/h1	Difference From Probred An kg/hl kg	From Anza kg/hl
i di	8 22 .8	81.5	81.1	+	+1 7
1977 Exp. 18	81.9	80.3	82.6 81.6	+ + 2.1.5	+0.1
EXP EXP	81.4	78.8	78.4 81.6		+0.4
Average	81.5	7.67	81.1	+1.8	+0.3
Woodland	ž .			- N	÷
1976 Exp. 28 1977 Exp. 18		82.4	83.3	+0+ -0+	8.6
	79.9	79.0	80.4	+1.3	0.0
Average	81.3	80.7	82.0	9.0+	-0.7
Average (9 loc-yr)	81.4	80.2	81.5	+1.2	-0.1

 $Lb/Bu = kg/hl \times 0.78$ 

EXHIBIT D

Plant height of Klasic in comparison to checks grown in replicated small plot trials in Yuma, Arizona and Woodland, California in 1976-80. Table 2.

Location and Year	Klasic	Probred cm	Anza cm	Difference From Probred Angel	ce From Anza cm
Yuma					
	84	72	98	+12	6[-
	90	06	66		1 0
Exp.	09	99	78	1	~ -
Exp	93	93	105	. 0	-12
EXD.	82	82	92	۳ + ا	7
Average	82	81	76	+1.8	-11.6
		,			
Woodland					
Exp.	06	95	103	LC I	-13
1977 Exp. 18	70	74	76	1	) \c
Exp.	84	84	8	· c	1
Exp.	74	73	06	) <del> </del>	-16
Average	80	8	68	-2.5	19.3
Average (9 Loc-Yr)	81.1	81.0	91.7	1-0-1	-10.6

MV E

EXHIBIT D

Date of heading of Klasic in comparison to checks grown in replicated small plot trials at Yuma, Arizona and Woodland, California in 1976-80. Table 3.

Exp. 28 Exp. 18 Exp. 14 Exp. 38 Exp. 46 655 655 14	Probred 75 81 79 89 72	Anza 81 83 87 95	Probred And Days Days Days -3	Anza Days
EXP. 28 EXP. 18 EXP. 38 EXP. 46 EXP. 46	75 81 79 89 72	81 83 87 95	£	
EXP. 28 EXP. 18 EXP. 38 EXP. 46	75 81 79 72 79	88 89 95 55 55 55 55 55 55 55 55 55 55 55 55	en I	and the state of t
EXP. 18 EXP. 14 EXP. 38 EXP. 46 ge	81 79 72 79	0 8 8 0 1 6 7 10		ğ
Exp. 14 Exp. 38 Exp. 46 ge	79 89 72 79	87 95	۱ ،	n o
Exp. 38	889 72 79	95	- LC	) <del>[</del> ]
Exp. 46	72	1	) <b>4</b> *	-10
<b>0</b>	79	80	7	113
		ខេ	15.2	-11.2
į				
ļ				
Exp. 28	95	111	<b>α</b>	α
1977 Exp. 18	106	109	? ተ	1 4
Exp. 14	84	92	· œ	י עם רו
Exp. 46	96	104		6-1
Average 95	95	104	-0.5	-9,3
Average (9 Loc-Yr) 83.2	86.3	93.6	13.1	-10.4

Date 85 = March 26

EXHIBIT D

Relative maturity of Klasic in comparison to checks grown in replicated small plot trials at Yuma, Arizona and Woodland, California in 1976-80. 1/Table 4.

Location and Year	Klasic	Probred	Anza	Difference From Probred An	ce From Anza
Yuma					
Exp.	4 ከ	w t	v	<b>1</b>	8
1979 Exp. 38 1980 Exp. 46	O 4 니	~ m ~l	~ <b>~</b> &	2 H H   + 1	7 # T
Average	4	47*	7	-0.3	-3.5
Woodland					
Exp.	₹*	- 8	∞	+2	7
1977 Exp. 18 1978 Exp. 14	v 0	m (N	<b>-</b> 4	<b>m ⊂</b>  +  }	' F C
Exp.	ml	ml		» <b>이</b>	7 7
Average	4	т	v	+1.3	-2.3
Average (8 Loc-Yr)	3.6	3.1	6.5	+0.5	-2.9
					•

1/ Scale of 1-9 with 1 = earliest and 9 = latest.

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EXHIBIT D

Table 5. Quality characteristics of Klasic and Probred at Yuma Arizona in 1977-1979.

Characteristics	1977 Klasic	7 Probred	1978 Klasic	Probred	1979 Klasic	9 Probred
Wheat Protein Milling Ext. %	11.9 68.0 G-	13.2 71.0 G	14.0 75.6 VG-	13.8 72.0 G	12.3 73.9 G	11.8 71.8 G
Farinograph Absorption Peak Stability MTI Valorimeter	ი . ი ი ი ი . ი ი 4 ი ა ი ი	61.0 8.5 15.5	64.7 8.5 15.0 74	63.4 8.0 13.0	59 111.0 18.0 18.5 19.0	61.0 7.5 14.0
Flour Ash Protein	.39	.46	13.0	.40 12.8	.35	10.8
Bake Absorption Mix Dough Loaf Vol. cc Score	64.5 G 3.2 G- 4 G 850 G	63.5 G 4.0 G 5 G- 26 G-	66.5 VG- 3.5 G 6 G 1000 VG 30 G-	66.5 VG- 3.8 G 5 G- 910 G- 24 F+	62.5 5.5 G1 875 G1 25 G1	64.0 4.3 945 28 6.
Overall Score	45 F	55 G-	63 G	55 G-	54 G-	58 G-

# EXHIBIT D

Table 6. Quality characteristics of Klasic and Probred at Woodland, California in 1976 and 1978.

	19	76	197	'8
Characteristics	Klasic	Probred	Klasic	Probred
Wheat Protein	12.9	13.6	12.8	13.4
Milling Ext. %	68.6 G-	67.2 F	71.0 G	69.9 G-
Farinograph				
Absorption	58.6	61.5	62.4	62.5
Peak	11.2	6.0	12.5	8.0
Stability	25.5	12.5	24.5	16.0
MTI	25	20	10 %	20
Valorimeter	84	66	86	72
Flour				
Ash	.34	.36	.40	.37
Protein	11.8	12.4	11.8	12.2
Bake				
Absorption	62.0 G-	63.5 G	65.0 G	65.5 G+
Mix	4.8 VG	3.5 G	4.8 VG	3.8 G
Dough	6 G	6 G	6 G	6 G
Loaf Vol. cc	1000 VG	965 G	925 G	990 VG-
Score	32 G	29 G <del>-</del>	29 G-	30 G
Overall Score	;62 G	55 G <del>-</del>	61 G-	60 G-